

FIG. 1A

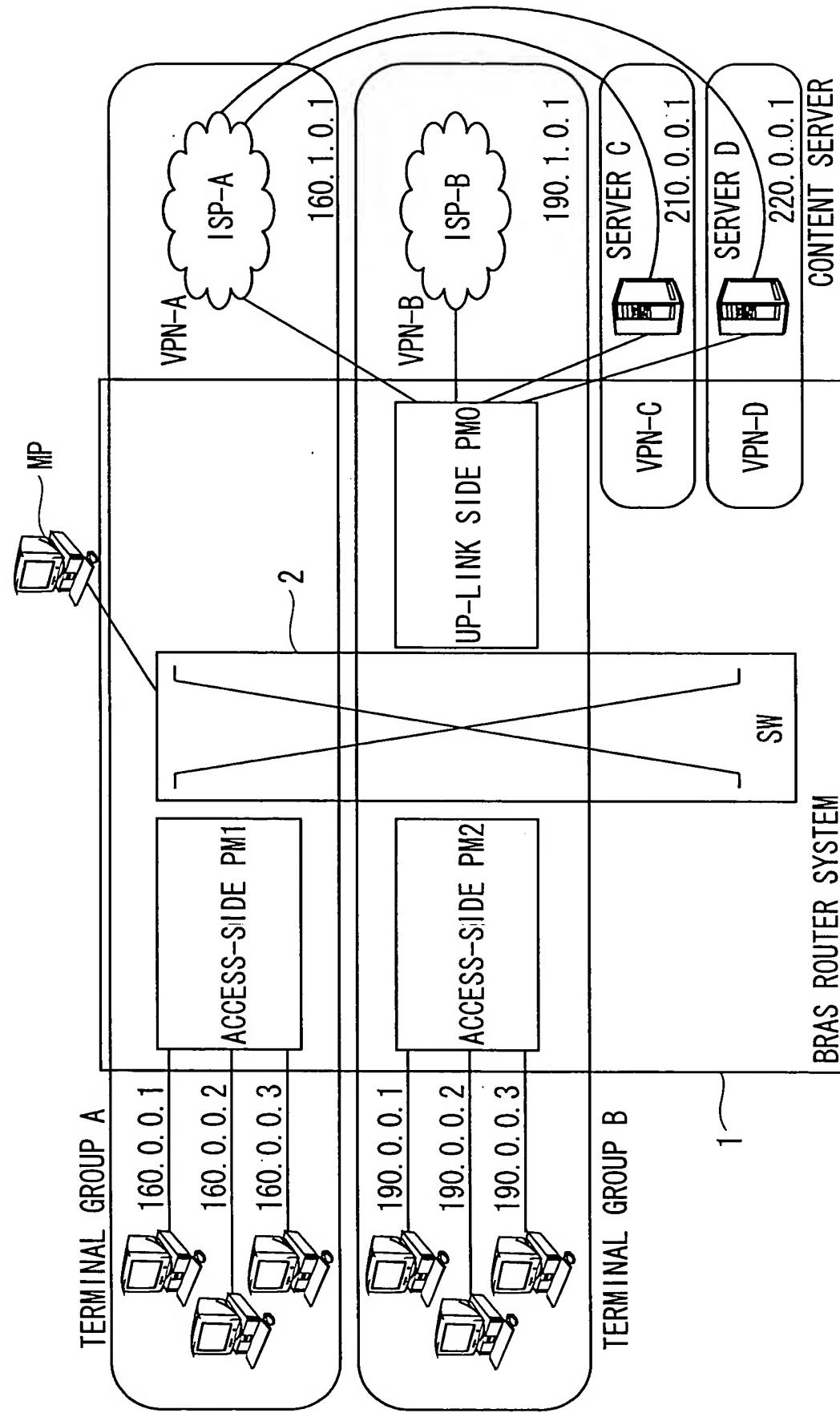


FIG. 1B

ROUTING ENTRIES (FOR TERMINAL)

CAM ENTRY INFORMATION			SRAM ASSOCIATIVE DATA INFORMATION		
VPN	ADDRESS	BLADE NUMBER	PORT	TRANSMITTING-SIDE VPN	
A	160. 0. 0. 1	SWB1	1	A	
A	160. 0. 0. 2	SWB1	1	A	
A	160. 0. 0. 3	SWB1	1	A	
B	160. 0. 0. 1	SWB1	1	A	
B	160. 0. 0. 2	SWB1	1	A	
B	160. 0. 0. 3	SWB1	1	A	
C	160. 0. 0. 1	SWB1	1	A	
C	160. 0. 0. 2	SWB1	1	A	
C	160. 0. 0. 3	SWB1	1	A	
D	160. 0. 0. 1	SWB1	1	A	
D	160. 0. 0. 2	SWB1	1	A	
D	160. 0. 0. 3	SWB1	1	A	

ROUTING ENTRIES (NETWORK ADDRESS)

CAM ENTRY INFORMATION			SRAM ASSOCIATIVE DATA INFORMATION			REMARKS	
VPN	ADDRESS	BLADE PORT NUMBER	TRANSMITTING -SIDE VPN				
A	160. 0. 0. 0	SWB1	1	A	ISP. A→TERMINAL GROUP A	D	
C	160. 0. 0. 0	SWB1	1	A	SERVER C→TERMINAL GROUP A	D	160. 0. 0. 3 SWB1
D	160. 0. 0. 0	SWB1	1	A	SERVER D→TERMINAL GROUP A	A	190. 0. 0. 1 SWB2
B	190. 0. 0. 0	SWB2	1	B	ISP. B→TERMINAL GROUP B	A	190. 0. 0. 2 SWB2
C	190. 0. 0. 0	SWB2	1	B	SERVER C→TERMINAL GROUP B	A	190. 0. 0. 3 SWB2
D	190. 0. 0. 0	SWB2	1	B	SERVER D→TERMINAL GROUP B	B	190. 0. 0. 1 SWB2
A	160. 1. 0. 0	SWB0	1	A	TERMINAL GROUP A→ISP. A	B	190. 0. 0. 2 SWB2
B	190. 1. 0. 0	SWB0	2	B	TERMINAL GROUP B→ISP. B	B	190. 0. 0. 3 SWB2
A	210. 0. 0. 0	SWB0	3	C	TERMINAL GROUP A→ SERVER C	C	190. 0. 0. 1 SWB2
B	210. 0. 0. 0	SWB0	3	C	TERMINAL GROUP B→ SERVER C	C	190. 0. 0. 2 SWB2
C	210. 0. 0. 0	SWB0	3	C	TERMINAL GROUPS A, B→ SERVER C	C	190. 0. 0. 3 SWB2
A	220. 0. 0. 0	SWB0	4	D	TERMINAL GROUP A→ SERVER D	D	190. 0. 0. 1 SWB2
B	220. 0. 0. 0	SWB0	4	D	TERMINAL GROUP B→ SERVER D	D	190. 0. 0. 2 SWB2
D	220. 0. 0. 0	SWB0	4	D	TERMINAL GROUPS A, B→ SERVER D	D	190. 0. 0. 3 SWB2

FIG. 2

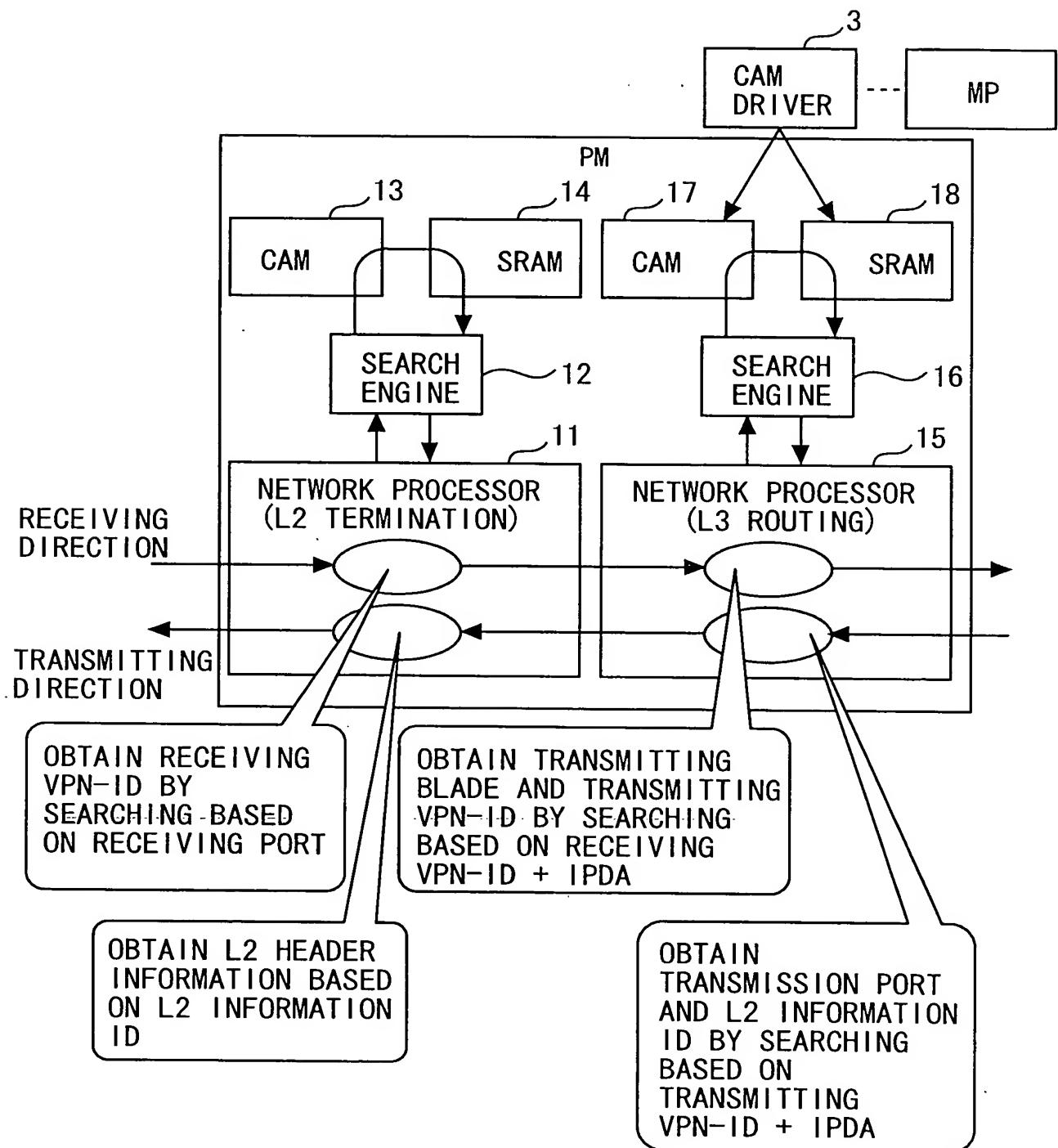


FIG. 3A

RECEIPT PORT	L2 HEADER INFORMATION ID	SRAM ADDRESS	14:SRAM
⋮	⋮	⋮	⋮

FIG. 3B

CAM DEVICE (ROUTING TABLE)
17:CAM

(RECEIVING-SIDE OR TRANSMITTING-SIDE) VPN-ID	IP DA	SRAM ADDRESS	TRANSMITTING -SIDE PM	TRANSMISSION PORT	TRANSMITTING -SIDE VPN-ID	18:SRAM
⋮	⋮	⋮	⋮	⋮	⋮	⋮

FIG. 4

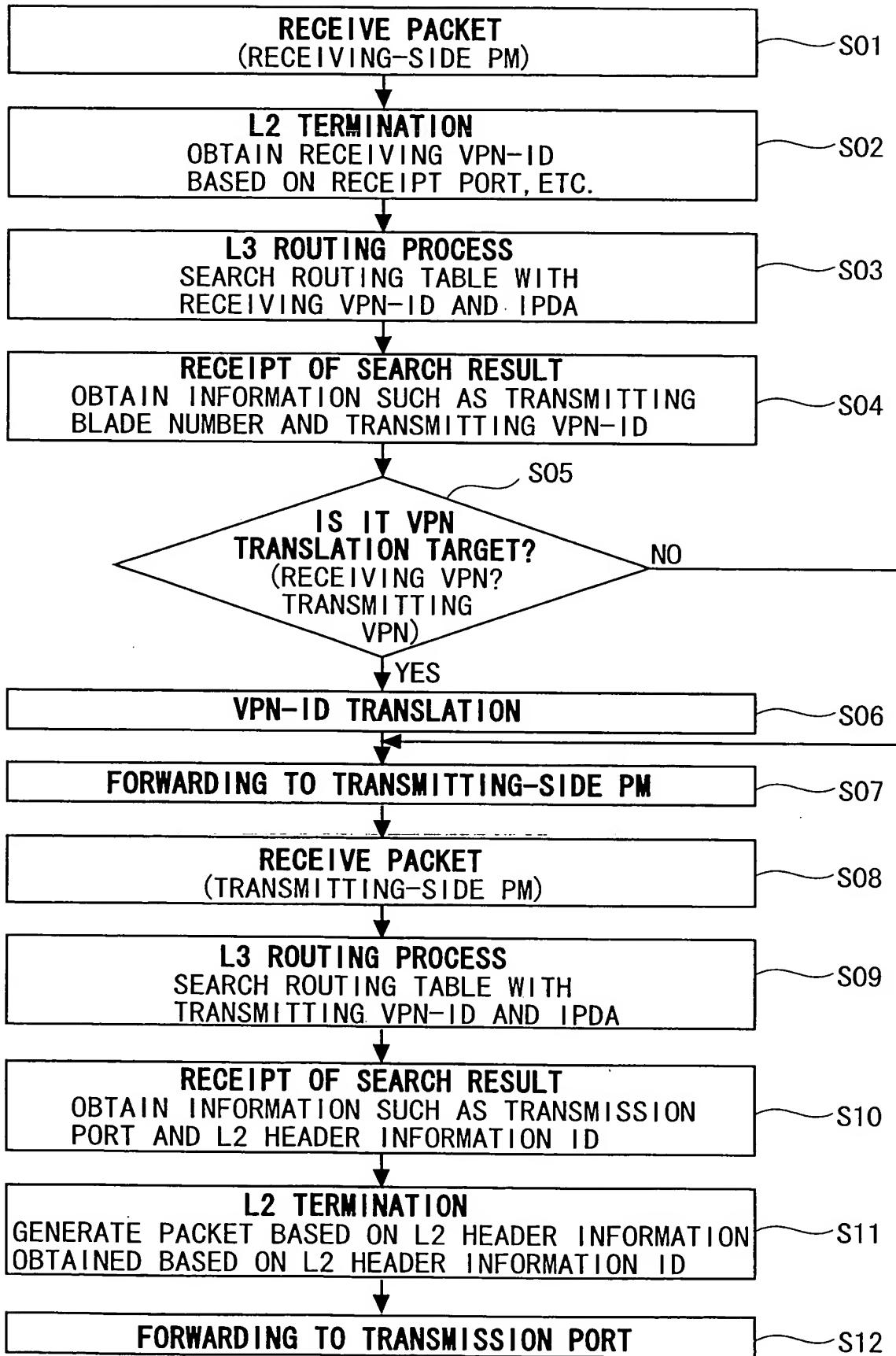


FIG. 5

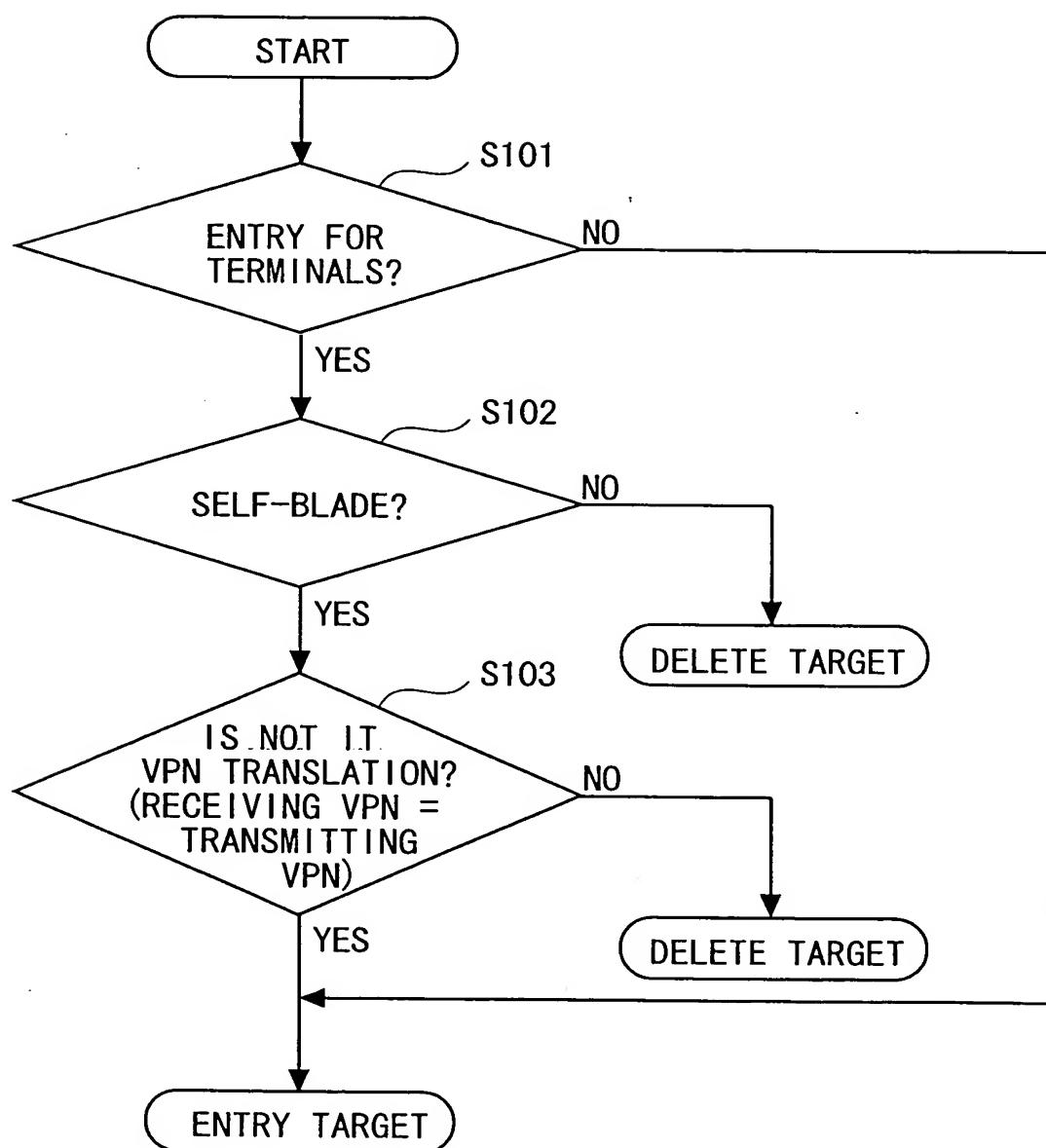


FIG. 6A

ROUTING ENTRIES (FOR TERMINAL)

CAM ENTRY INFORMATION		SRAM ASSOCIATIVE DATA INFORMATION		
VPN	ADDRESS	BLADE NUMBER	PORT	TRANSMITTING-SIDE VPN
A	160.0.0.1	SWB1	1	A
A	160.0.0.2	SWB1	1	A
A	160.0.0.3	SWB1	1	A
B	160.0.0.1	SWB1	1	A
B	160.0.0.2	SWB1	1	A
B	160.0.0.3	SWB1	1	A
C	160.0.0.1	SWB1	1	A
C	160.0.0.2	SWB1	1	A
C	160.0.0.3	SWB1	1	A
D	160.0.0.1	SWB1	1	A
D	160.0.0.2	SWB1	1	A
D	160.0.0.3	SWB1	1	A
A	190.0.0.1	SWB2	1	B
A	190.0.0.2	SWB2	1	B
A	190.0.0.3	SWB2	1	B
B	190.0.0.1	SWB2	1	B
B	190.0.0.2	SWB2	1	B
B	190.0.0.3	SWB2	1	B
C	190.0.0.1	SWB2	1	B
C	190.0.0.2	SWB2	1	B
C	190.0.0.3	SWB2	1	B
D	190.0.0.1	SWB2	1	B
D	190.0.0.2	SWB2	1	B
D	190.0.0.3	SWB2	1	B

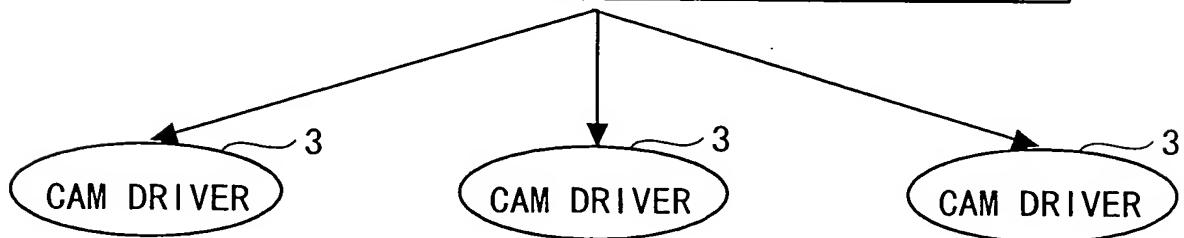


FIG. 6B

ROUTING ENTRY (FOR TERMINAL)		ROUTING ENTRY (FOR TERMINAL)		ROUTING ENTRY (FOR TERMINAL)	
CAM ENTRY INFORMATION	SRAM ASSOCIATIVE DATA INFORMATION	CAM ENTRY INFORMATION	SRAM ASSOCIATIVE DATA INFORMATION	CAM ENTRY INFORMATION	SRAM ASSOCIATIVE DATA INFORMATION
VPN ADDRESS	BLADE NUMBER (PORT) TRANSMITTING-SIDE VPN	VPN ADDRESS	BLADE NUMBER (PORT) TRANSMITTING-SIDE VPN	VPN ADDRESS	BLADE NUMBER (PORT) TRANSMITTING-SIDE VPN
A : 160.0.0.1	SWB1 : 1	A : 160.0.0.1	SWB1 : 1	A : 160.0.0.1	SWB1 : 1
A : 160.0.0.2	SWB1 : 1	A : 160.0.0.2	SWB1 : 1	A : 160.0.0.2	SWB1 : 1
A : 160.0.0.3	SWB1 : 1	A : 160.0.0.3	SWB1 : 1	A : 160.0.0.3	SWB1 : 1
B : 160.0.0.1	SWB1 : 1	A : 160.0.0.1	SWB1 : 1	B : 160.0.0.1	SWB1 : 1
B : 160.0.0.2	SWB1 : 1	A : 160.0.0.2	SWB1 : 1	B : 160.0.0.2	SWB1 : 1
B : 160.0.0.3	SWB1 : 1	A : 160.0.0.3	SWB1 : 1	B : 160.0.0.3	SWB1 : 1
C : 160.0.0.1	SWB1 : 1	A : 160.0.0.1	SWB1 : 1	C : 160.0.0.1	SWB1 : 1
C : 160.0.0.2	SWB1 : 1	A : 160.0.0.2	SWB1 : 1	C : 160.0.0.2	SWB1 : 1
C : 160.0.0.3	SWB1 : 1	A : 160.0.0.3	SWB1 : 1	C : 160.0.0.3	SWB1 : 1
D : 160.0.0.1	SWB1 : 1	A : 160.0.0.1	SWB1 : 1	D : 160.0.0.1	SWB1 : 1
D : 160.0.0.2	SWB1 : 1	A : 160.0.0.2	SWB1 : 1	D : 160.0.0.2	SWB1 : 1
D : 160.0.0.3	SWB1 : 1	A : 160.0.0.3	SWB1 : 1	D : 160.0.0.3	SWB1 : 1
E : 190.0.0.1	SWB2 : 1	A : 190.0.0.1	SWB2 : 1	E : 190.0.0.1	SWB2 : 1
E : 190.0.0.2	SWB2 : 1	A : 190.0.0.2	SWB2 : 1	E : 190.0.0.2	SWB2 : 1
E : 190.0.0.3	SWB2 : 1	A : 190.0.0.3	SWB2 : 1	E : 190.0.0.3	SWB2 : 1
F : 190.0.0.1	SWB2 : 1	B : 190.0.0.1	SWB2 : 1	F : 190.0.0.1	SWB2 : 1
F : 190.0.0.2	SWB2 : 1	B : 190.0.0.2	SWB2 : 1	F : 190.0.0.2	SWB2 : 1
F : 190.0.0.3	SWB2 : 1	B : 190.0.0.3	SWB2 : 1	F : 190.0.0.3	SWB2 : 1
G : 190.0.0.1	SWB2 : 1	C : 190.0.0.1	SWB2 : 1	G : 190.0.0.1	SWB2 : 1
G : 190.0.0.2	SWB2 : 1	C : 190.0.0.2	SWB2 : 1	G : 190.0.0.2	SWB2 : 1
G : 190.0.0.3	SWB2 : 1	C : 190.0.0.3	SWB2 : 1	G : 190.0.0.3	SWB2 : 1
H : 190.0.0.1	SWB2 : 1	D : 190.0.0.1	SWB2 : 1	H : 190.0.0.1	SWB2 : 1
H : 190.0.0.2	SWB2 : 1	D : 190.0.0.2	SWB2 : 1	H : 190.0.0.2	SWB2 : 1
H : 190.0.0.3	SWB2 : 1	D : 190.0.0.3	SWB2 : 1	H : 190.0.0.3	SWB2 : 1

FIG. 7A

PRIOR ART

RECEIVE VPN-ID OF RECEIVING
BLADE AS DATA, SEARCH THROUGH
ROUTING CAM WITH VPN-ID+IPDA
AND SPECIFY TRANSMISSION PORT

TERMINAL GROUP A

160. 0. 0. 1

160. 0. 0. 2

160. 0. 0. 3

ACCESS-SIDE PM

190. 0. 0. 1

190. 0. 0. 2

190. 0. 0. 3

ACCESS-SIDE PM

TERMINAL GROUP B

VPN-C

190. 1. 0. 1

VPN-B

160. 1. 0. 1

ISP-A

VPN-A

VPN-D

220. 0. 0. 1

CONTENT SERVER

SERVER D

210. 0. 0. 1

SERVER C

190. 1. 0. 1

SW

BRAS ROUTER SYSTEM

SPECIFY VPN FROM RECEIPT PORT,
SEARCH THROUGH ROUTING CAM
WITH VPN-ID + IPDA AND SPECIFY
TRANSMITTING BLADE

FIG. 7B PRIOR ART

ROUTING ENTRIES (NETWORK ADDRESS)

VPN	ADDRESS	PREFIX	REMARKS
A	160.0.0.0	24	ISP. A → TERMINAL GROUP A
C	160.0.0.0	24	SERVER C → TERMINAL GROUP A
D	160.0.0.0	24	SERVER D → TERMINAL GROUP A
B	190.0.0.0	24	ISP. B → TERMINAL GROUP B
C	190.0.0.0	24	SERVER C → TERMINAL GROUP B
D	190.0.0.0	24	SERVER D → TERMINAL GROUP B
A	160.1.0.0	24	TERMINAL GROUP A → ISP. A
B	190.1.0.0	24	TERMINAL GROUP B → ISP. B
A	210.0.0.0	24	TERMINAL GROUP A → SERVER C
B	210.0.0.0	24	TERMINAL GROUP B → SERVER C
C	210.0.0.0	24	TERMINAL GROUPS A, B → SERVER C
A	220.0.0.0	24	TERMINAL GROUP A → SERVER D
B	220.0.0.0	24	TERMINAL GROUP B → SERVER D
D	220.0.0.0	24	TERMINAL GROUPS A, B? SERVER D

FIG. 7C PRIOR ART

ROUTING ENTRIES (FOR TERMINAL)

VPN	ADDRESS	PREFIX	REMARKS
A	160.0.0.1	32	
A	160.0.0.2	32	
A	160.0.0.3	32	
B	160.0.0.1	32	OVERLAPPED SETTING
B	160.0.0.2	32	OVERLAPPED SETTING
B	160.0.0.3	32	OVERLAPPED SETTING
C	160.0.0.1	32	OVERLAPPED SETTING
C	160.0.0.2	32	OVERLAPPED SETTING
C	160.0.0.3	32	OVERLAPPED SETTING
D	160.0.0.1	32	OVERLAPPED SETTING
D	160.0.0.2	32	OVERLAPPED SETTING
D	160.0.0.3	32	OVERLAPPED SETTING
A	190.0.0.1	32	OVERLAPPED SETTING
B	190.0.0.1	32	
B	190.0.0.2	32	
B	190.0.0.3	32	
C	190.0.0.1	32	OVERLAPPED SETTING
C	190.0.0.2	32	OVERLAPPED SETTING
C	190.0.0.3	32	OVERLAPPED SETTING
D	190.0.0.1	32	OVERLAPPED SETTING
D	190.0.0.2	32	OVERLAPPED SETTING
D	190.0.0.3	32	OVERLAPPED SETTING

MULTIPlicity OF OVERLAPPED
ENTRIES FOR TERMINALS